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09/752,350	12/29/2000	Morihito Notani	FUJR 18.135	8420

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EXAMINER	
VARTANIAN, HARRY	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/752,350	NOTANI, MORIHITO	
	Examiner	Art Unit	
	Harry Vartanian	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 1, 2, 4, 5, 8-13, 14-16, 18-19, 22-30, 32-33, and 36-40 are rejected under 35 U.S.C. 102(a) as being anticipated by Norman(US Patent# 6,011,802). Regarding Claim 1, Norman meets the following limitations:

> A transmission unit which transmits and receives digital signals over a first and second network systems, comprising: **(column 8, lines 50-55)**
>
> (a) first signal interface means for transmitting and receiving first network signals; **fig 4**
>
> (b) second signal interface means for transmitting and receiving second network signals; and **fig 4**
>
> (c) two-way signal conversion means for making conversions between the first network signals and the second network signals, comprising: **(Column 10, Lines 12-17)**
>
> downward conversion means for producing lower level signals by converting the received first and second network signals down to a lower hierarchical level **(Column 13, Lines 62-66)**
>
> at which the first and second network systems are compatible with each other in terms of logical signal structure, **(Column 7, Line 66 to Column 8, Line 12)**
>
> upward conversion means for converting a given lower-level signal up to a higher hierarchical level which complies with the first or second network system, thereby producing a first or second outgoing higher-level network signal, and **(Column 11, Lines 43-49); Claim 1**
>
> looping back means for looping back the produced lower-level signals at the lower hierarchical level to said upward conversion means, thereby causing the received first and second network signals to be converted into the second and first outgoing network signals, respectively. **Fig 4; (Column 7, Line 66 to Column 8, Line 22)**

Regarding Claim 2, Norman meets the following limitations:

> said downward conversion means terminates overhead information contained in the received first and second network signals during the downward conversion; and **(Column 13, Lines 62-66)**
>
> said upward conversion means inserts overhead information to the first and second outgoing higher-level network signals during the upward conversion. **(Column 11, Lines 43-49); Claim 1**

Regarding Claim 4, Norman meets the following limitations:

wherein said two-way signal conversion means makes transmission rate conversions between the first and second network signals. **(Column 4, Lines 9-39)**

Regarding Claim 5, Norman meets the following limitations:

a conversion from TU-11 to TU-12; **(Column 6, Line 66 to Column 7, Lines 6), (Column 13, Lines 23-34)**

Regarding Claim 8, Norman meets the following limitations:

two-way conversions between high-order group signals belonging to different hierarchical series of signals; **Claim 1**

Regarding Claim 9, Norman meets the following limitations:

two-way conversions between SDH signals and SONET signals; **(Column 16, Lines 19-26)**

Regarding Claim 10, Norman meets the following limitations:

wherein said two-way signal conversion means makes the conversions between the first and second network signals, based on AU pointer types identified. **(Column 7, Lines 29-37)**

Regarding Claim 11, Norman meets the following limitations:

wherein said two-way signal conversion means makes the conversions between the first and second network signals, based on a value given in a byte in a frame overhead. **(Column 10, Line 30-40) (Column 7, Lines 29-37)**

Regarding Claim 12, Norman meets the following limitations:

interfacing with a network management console which is used in operations and maintenance of the conversions between the first and second network signals. **(Fig 4, items 168 172)**

Regarding Claim 13, Norman meets the following limitations:

comprising a low-order group interface which processes low-order group signals, wherein said two-way signal conversion means is employed as an integral part of said low-order group interface. **(Column 7, Line 66 to Column 8, Line 12)**

Regarding Claim 14, Norman meets the following limitations:

A transport system which transmits and receives digital signals over a first and second network systems **(column 8, lines 50-55); fig 4**

(a) a first transmission unit comprising: first signal interface means for transmitting and receiving first network signals over the first network system, **fig 4**

first downward conversion means for producing a first lower-level signal by converting the received first network signals down to a lower hierarchical level **(Column 13, Lines 62-66)**

at which the first and second network systems are compatible with each other in terms of logical signal structure, and first upward conversion means for converting a given second lower-level signal up to a higher hierarchical level which complies with the first network system, thereby producing a first outgoing higher-level network signal; and **(Column 9, Line 61 to Column 10, line 12)**

(b) a second transmission unit comprising: second signal interface means for transmitting and receiving second network signals over the second network system, **Claim 1**

second downward conversion means for producing the second lower-level signal by converting the receivedsecond network signal down to the lower hierarchical level at which the first and second network systems are compatible with each other in terms of logical signal structure, and **(Column 7, Line 66 to Column 8, Line 12)**

second upward conversion means for converting the first lower-level signal up to a higher hierarchical level which complies with the second network system, thereby producing a second outgoing higher-level network signal. **Claim 1**

Regarding Claim 15, Norman meets the following limitations:

A transmission unit which transmits and receives digital signals over a first and second network systems, comprising: **(column 8, lines 50-55); fig 4**

(a) first signal interface means for receiving a first network signal and converts the received first network signal into a first internal signal with a fixed bit rate, **(Column 4, Lines 20-28); Claim 1**

and for sending an outgoing first network signal which is converted from a given second remapped internal signal with the same fixed rate; **(Column 4, Lines 20-28); Claim 1**

(b) second signal interface means for receiving a second network signal and converting the received second network signal into a second internal signal with the fixed bit rate, and for sending out an outgoing second network signal which is converted from a given first remapped internal signal with the same fixed rate; **Norman (Column 4, Lines 20-28); Claim 1**

(c) two-way signal conversion means for making conversions between the first and second network signals; comprising: **(Column 10, Lines 12-17)**

downward conversion means for producing lower level signals by converting the first and second internal signals down to a lower hierarchical level at which the first and second network systems are compatible with each other in terms of logical signal structure, **(Column 7, Line 66 to Column 8, Line 12); Claim 1**

upward conversion means for producing a first or second remapped internal signal by converting a given lower-level signal up to a higher hierarchical level which complies with the first or second network system, and **Claim 1**

looping back means for looping back, at the lower hierarchical level, the lower-level signals from said downward conversion means to said upward conversion means **Fig 4, Fig 5; (Column 7, Line 66 to Column 8, Line 22)**

to cause the lower-level signals deriving from the received first and second network signals to be converted to the first and second remapped internal signals, respectively; and **Claim 1**

(d) switching means for providing and controlling circuit paths to route the first internal signal, the second internal signal, the first remapped internal signal, and the second remapped internal signal. **(Fig 5, item 178)**

Regarding Claim 16, Norman meets the following limitations:

said downward conversion means terminates overhead information contained in the first and second internal signals during the downward conversion; and **(Column 13, Lines 62-66)**

said upward conversion means inserts overhead information to the first and second remapped internal signals during the upward conversion. **(Column 11, Lines 43-49); Claim 1**

Regarding Claim 18, Norman meets the following limitations:

wherein said two-way signal conversion means makes transmission rate conversions between the first and second network signals. **(Column 4, Lines 9-39)**

Regarding Claim 19, Norman meets the following limitations:

a conversion from TU-11 to TU-12; **(Column 6, Line 66 to Column 7, Lines 6), (Column 13, Lines 23-34)**

Regarding Claim 22, Norman meets the following limitations:

two-way conversions between high-order group signals belonging to different hierarchical series of signals; **Claim 1**

Regarding Claim 23, Norman meets the following limitations:

two-way conversions between SDH signals and SONET signals; **(Column 16, Lines 19-26)**

Regarding Claim 24, Norman meets the following limitations:

...based on AU pointer types identified. **(Column 7, Lines 29-37)**

Regarding Claim 25, Norman meets the following limitations:

...based on a value given in a byte in a frame overhead. **(Column 10, Line 30-40) (Column 7, Lines 29-37)**

Regarding Claim 26, Norman meets the following limitations:

wherein further comprising means for interfacing with a network management console which is used in operations and maintenance of the conversions between the first and second network signals. **(Fig 4, items 168 172)**

Regarding Claim 27, Norman meets the following limitations:

comprising a low-order group interface which processes low-order group signals, wherein said two-way signal conversion means is employed as an integral part of said low-order group interface. **(Column 7, Line 66 to Column 8, Line 12)**

Regarding Claim 28, Norman meets the following limitations:

A transport system which transmits and receives digital signals over a first and second network systems, comprising: **(Column 8, Lines 50-55); fig 4**

(a) a first transmission unit comprising: first signal interface means for receiving a first network signal and converts the received first network signal into a first internal signal with a fixed bit rate, and for sending

out an outgoing first network signal which is converted from a given second remapped internal signal with the same fixed rate; **(Column 4, Lines 20-28); Claim 1**

first downward conversion means for producing a first lower-level signal by converting the first internal signal down to a lower hierarchical level at which the first and second network systems are compatible with each other in terms of logical signal structure, and **(Column 7, Line 66 to Column 8, Line 12); Claim 1**

first upward conversion means for producing a first remapped internal signal by converting a given second lower-level signal up to a higher hierarchical level which complies with the first network system, and **Claim 1**

(b) a second transmission unit comprising:
second signal interface means for receiving a second network signal and converting the received second network signal into a second internal signal with a fixed bit rate, and for sending out an outgoing second network signal which is converted from the first remapped internal signal; **Claim 1**

second downward conversion means for producing the second lower-level signal by converting the second internal signal down to a lower hierarchical level at which the first and second network systems are compatible with each other in terms of logical signal structure, and**(Column 7, Line 66 to Column 8, Line 12)**

second upward conversion means for producing the second remapped internal signal by converting the first lower-level signal up to a higher hierarchical level which complies with the second network system. **Claim 1**

Regarding Claim 29, Norman meets the following limitations:

A two-way signal conversion method which converts network signals between a first and second network systems, **(Column 8, Lines 50-55); fig 4**

(a) producing lower--level signals by converting a first and second incoming network signals down to a lower hierarchical level at which the first and second network systems are compatible with each other in
terms of logical signal structure; **(Column 7, Line 66 to Column 8, Line 12)**

(b) producing higher-level signals by converting each given lower-level signal up to a higher hierarchical level which complies with the first or second network system; and **Claim 1**

(c) looping back**(Fig 4, Fig 5)** the produced lower-level signals to said step (b), whereby the lower-level signal resulting from the first incoming network signal will be converted into an outgoing signal to the second network system, and the lower-level signal resulting from the second incoming network signal will be converted into an outgoing signal to the first network system. **Claim 1;**

Regarding Claim 30, Norman meets the following limitations:

said step (a) of producing the lower-level signals comprises terminating overhead information contained in the first and second incoming network signals during the downward conversion; and **Claim 1**

said step (b) of producing the higher-level signals comprises inserting overhead information to the outgoing signals during the upward conversion. **Claim 1**

Regarding Claim 32, Norman meets the following limitations:

wherein said step (b) of producing the higher-level signals comprises converting transmission rates of the first and second incoming network signals. **(Column 4, Lines 9-39)**

Regarding Claim 33, Norman meets the following limitations:

a conversion from TU-11 to TU-12; **(Column 6, Line 66 to Column 7, Lines 6), (Column 13, Lines 23-34)**

Regarding Claim 36, Norman meets the following limitations:

> two-way conversions between high-order group signals belonging to different hierarchical series of signals; **Claim 1**

Regarding Claim 37, Norman meets the following limitations:

> two-way conversions between SDH signals and SONET signals; **(Column 16, Lines 19-26)**

Regarding Claim 38, Norman meets the following limitations:

> identifying AU pointer types of the first and second incoming network signals; and converting the first and second incoming network signals, based on the identified AU pointer types. **(Column 7, Lines 29-37)**

Regarding Claim 39, Norman meets the following limitations:

> identifying a value given in a byte in a frame overhead of each first or second incoming network signal; and converting the first and second incoming network signals, based on the identified byte values. **(Column 10, Line 30-40) (Column 7, Lines 29-37)**

Regarding Claim 40, Norman meets the following limitations:

> the step of using a network management console for operations and maintenance of the conversions of the network signals. **(Fig 4, items 168 172)**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 6, 20, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman(US Patent# 6,011,802) in view of Chrisitie et al(US Patent# 6,690,674). Regarding Claim 6, Norman meets all the limitations of the Claim except disclosing the use converting ATM over fiber channels. However, Christie et al discloses in interfacing/internetworking invention that:

> "Asynchronous transfer mode (ATM) is one technology that is being used in conjunction with SONET and SDH to provide broadband call switching and call transport for telecommunication services. ATM is a protocol that describes communication of user communications in ATM cells. Because the protocol uses cells, calls can be transported on demand for connection-oriented traffic, connectionless-oriented traffic, constant-bit traffic, variable-bit traffic including bursty traffic, and between equipment that either requires timing or does not require timing." **(Column 8, Lines 46-55)**

Therefore, it would have been prima facie obvious at the time the invention was made for Norman's converter to able to convert ATM over SONET to ATM over SDH. The motivation to combine is that it is well known in art to those of ordinary skill that ATM is a common framing protocol to be used over fiber, or SONET. More over, Christie et al state ATM is a popular protocol to use because of its versatility stated in the paragraph above.

Regarding Claims 20 and 34, the rejection above is also applicable to these Claims.

3. Claims 7, 21, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman(US Patent# 6,011,802). Norman states that his converter be used for digital data, but does not explicitly state the processing of IP packets. It would have been obvious to one having ordinary skill in the art at the time the invention was made for any SONET or SDH interworking device to process IP packets since it was known in the art that IP is the dominant network layer protocol in most communication systems.

4. Claims 3, 17, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman(US Patent# 6,011,802) in view of Fedders et al(US Patent# 6,603,776).

Regarding Claim 3, Norman meets all the limitations of the Claim except disclosing the removal and insertion of stuff data. However, Fedders et al states:

"The three distinct AU3 data streams are processed by using write data row counters and write data column counters, one set of counters for each data stream, to identify the stuff columns that are included in the AU3 data. These stuff columns must be removed to enable the conversion of the Network Data into System Data...Recall that the purpose of the VCA in this direction is to convert the AU3's into TUG3's where a TUG-3 is a 9-row by 86-column structure. Thus, the VCA has removed the stuff columns by the time the signals get to this intermediate point. At reference point C, the signal has been augmented by a Dummy J1 (DJ1) byte column plus an H-pointer column for a total of 87 columns as shown in FIG. 6. The DJ1 byte (fixed stuff value=0) in a column of fixed stuff bytes (all set to 0) is equivalent to a column of zeros. A second columns is added which contains H1, H2, and H3 bytes with a preamble of 011010 (binary) in the H1 byte followed by a stuff value of 595 (base ten). H3 and the rest of the column is fixed stuffed to 0. The resulting stuff values in the H1, H2, and H3 bytes are 6A (hex), 53 (hex) and 00 (hex)." **(Column 5, Line 19 to column 6, line 18)**

Therefore, it would have been prima facie obvious at the time the invention was made to remove and insert stuff data in data formats used in SONET and/or SDH. The motivation to combine disclosed by fedders in that "AU-3...stuff columns must be removed to enable the conversion of the Network Data into System Data". Moreover, Norman states that his converter can process Au-3 data(Column 7, Lines 29-37). Therefore, removing and inserting stuff bits must be a required step for Au-3 conversion.

Regarding Claims 17 and 31, the rejection above is also applicable to these Claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 703.305.8698. The examiner can normally be reached on 9-5:30 Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703.305.4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry Vartanian
Examiner
Art Unit 2634

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